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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MONTANA
BILLINGS DIVISION

CARY G. YOUPEE; D. DWIGHT YOUPEE; JOSI YOUPEE; RENE MARTELL; MARVIN K. YOUPEE, SR., individually and as representative and next friend of MARVIN YOUPEE, JR., WILLIAM YOUPEE III, IRIS YOUPEE, and BRITTANY YOUPEE; EUGENE ABBOTT; MARGARET ABBOTT; CHARLES FOUR BEAR, individually and as representative and next friend of JORAY FOUR BEAR, JONATHON LITTLE WHIRLWIND, AVA LEE LITTLE WHIRLWIND and CHARLES FOUR BEAR II; ANNA FOUR BEAR; GEORGE F. RICKER, SR.; HELEN RICKER; GEORGE F. RICKER, JR., individually and as representative and next friend of ERIN RICKER; WILLIAM T. RICKER; ABIGAIL REDDOOR; IRMA REDDOOR; LAURA BLEAZARD, individually and as representative and next friend of DAVID BLEAZARD; ROSS BLEAZARD; ERICA BLEAZARD; TRIVIAN GRAINGER, individually and as representative and next friend of DANIEL GRAINGER and ADAM GRAINGER; DAVID GRAINGER; DAWN GRAINGER; DENISE GRAINGER, individually and as representative and next friend of JORDAN GRAINGER, JAY GRANDCHAMP and TINA KOHL; DONNA BUCKLES-WHITMER; WARREN WHITMER; and ALLEN YOUPEE,

Plaintiffs,

v.

MURPHY EXPLORATION & PRODUCTION CO., a Delaware corporation; MESA PETROLEUM CO., a Delaware corporation; PIONEER NATURAL RESOURCES USA, INC., a Delaware corporation; SAMSON HYDRO-CARBONS COMPANY, an Oklahoma

CV-98-108-BLG-JDS

DEPOSITION OF WILBUR L. DOVER

corporation; MARATHON OIL, an Ohio corporation; and JOHN DOES 10 through 50,

Defendants.

DEPOSITION

OF

MR. WILBUR L. DOVER,

called for examination by counsel for plaintiffs at the Brown Law Firm, 315 North 24th Street, City of Billings, County of Yellowstone, State of Montana, commencing at 09:00:34 on Wednesday, June 20, 2001.

APPEARANCES

For the Plaintiffs:	MR. BRIAN K. GALLIK Attorney at Law P. O. Box 6580 Bozeman, Montana 59771
For the Defendant Murphy:	MR. MICHAEL E. WEBSTER Attorney at Law P. O. Box 2529 Billings, Montana 59103
For the Defendant Mesa and Pioneer:	MR. JOHN WALKER ROSS Attorney at Law P. O. Box 849 Billings, Montana 59103
For the Defendant Hydrocarbons:	MR. ROBERT STERUP Attorney at Law P. O. Box 7188 Billings, Montana 59103
For the Defendant Marathon:	MR. GERALD B. MURPHY Attorney at Law P. O. Box 2559 Billings, Montana 59103

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EXHIBITS

REPORTER'S NOTE: "Uh-huh" and "Um-hmm" indicate affirmative responses. "Huh-uh" and "Hmm-um" indicate negative responses.

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MR. WILBUR L. DOVER,
called for examination by counsel for plaintiffs, after having been first duly sworn to testify the truth, the whole truth, and nothing but the truth, testified as follows:

EXAMINATION

BY MR. GALLIK:

Q Mr. Dover, could you please state your name for the record?

A Wilbur L. Dover.

Q "Dover" with a V?

A With a V, that's correct.

Q Where are you from, Mr. Dover?

A Originally northeast Texas, Jacksonville.

Q Current address?

A Current address is in Grapevine, Texas.

(Exhibit 54 was marked for identification.)

BY MR. GALLIK:

Q Mr. Dover, you've been designated by Pioneer to appear today on behalf of that particular company. I'm handing you what I'll mark as Exhibit 54, which is the notice of deposition. I would just ask if you've seen that before.

A Yes, I have.

(Exhibit 55 was marked for identification.)

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BY MR. GALLIK:

Q Okay. And then before you as well is Exhibit 55, which is a letter from your attorney to me, and have you seen that as well?

A Yes, I have.

Q Okay. And did you help him prepare that particular letter to me?

A I provided information to him to prepare the response.

Q And that basically outlines those areas where you are able to provide testimony today in light of the deposition notice that I sent out; is that correct?

A As I remember, that's correct.

Q Okay. What is your occupation, sir?

A My current position is operation services manager. I'm over the environmental department, safety department, and purchasing. My training is petroleum engineering.

Q And that is with Pioneer?

A Pioneer Natural Resources in Irving, Texas.

Q How long have you been employed with Pioneer Natural Resources?

A Since they were formed in August of '97.

Q Prior to coming to work for Pioneer, what did you do?

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A I worked for one of the companies that merged into Pioneer out of Midland, Texas: Parker & Parsley Petroleum Company.

Q And what were your positions with Parker?

A It was the same position.

Q Okay. How long have you been involved in the petroleum industry?

A Since 1962.

Q You say your educational training is in petroleum engineering?

A B.S. degree in petroleum engineering from Texas A&M, 1962.

Q Have you spent most of your working days in the petroleum industry in Texas?

A Not just Texas. In a number of states.

Q Okay.

A Texas, Louisiana, Colorado, Wyoming, Montana.

Q Okay. Let's talk about your time in Montana. What type of work did you do in Montana?

A Used to be with another company called Grant Resources, headquartered out of Denver, and I was the operations manager.

Q Okay.

A And we had properties scattered throughout the Rocky Mountains.

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Q And with respect to the properties in Montana, where were those properties located?

A They were located up in north – around Plentywood, Montana.

Q Do you recall, just out of curiosity, when – I take it you went to Plentywood on occasion?

A Three or four times.

Q Okay. Roughly what years would that have been?

A Prior to 1991.

Q Okay. After 1980 and before 1991?

A No, it would have been between '88 and '91.

Q Okay. Moving ahead now to the Pioneer Natural Resources position, it sounds like you have several titles that you have.

A Just one title.

Q Operations services –

A Operation services manager.

Q Okay. And as subsets within that, we talked about environmental – that's a part of the –

A Those are departments under me, right.

Q Okay. What generally are your duties and responsibilities as an operation services manager?

A As manager, to oversee the operation of those three departments. I have managers in two of those departments, and I do directly manage the

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environmental department.
Q Okay.
A It would be a correction. There would be a dual function there.
Q Did you have a role in the environmental side of the profession when you worked for Parker?
A Yes, I did.
Q Okay. And what was that?
A Same position. That was in the last two years that Parker & Parsley existed. Prior to that, I was operations manager over an area.
Q Okay. And what area was that?
A It was the Permian Basin area.
Q Is that in Texas?
A That's in west Texas.
Q In terms of the acquisition, merger, were you involved at all in the formation of Pioneer Natural Resources, the various companies?
A I was just part of the corporate group that basically did some of the due diligence and looking and completing, helping to complete the merger between Mesa and Parker & Parsley from the Parker & Parsley side.
Q In terms of the merger that we're talking about there, was it two companies that came together?

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A That's correct.
Q Okay. Mesa and Parker?
A Well, originally there were two companies. There were actually five mergers that year.
Q Okay.
A Mesa Petroleum merged or actually bought out Greenhill Petroleum –
Q Okay.
A – in February, or I think February of that same year, '97. And then after the merger between Mesa and Parker & Parsley, there were two other mergers. Picked up a company out of Canada called Schavco, with operations in Canada and Argentina, and then another company called Cometra that had limited holdings in west Texas and east Texas.
Q So it's fair to say that all these companies are now –
A Pioneer.
Q – Pioneer?
A That's correct.
Q And the scope of your operations as Pioneer would include Canada, Argentina, various properties in the United States?
A Domestic as well as our international operations, that is correct.

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Q And the role or what Pioneer primarily does is energy?
A Exploration and production company.
Q Of petroleum products?
A That's correct.
Q Anything else?
A No.
Q Okay. Did you have any participation in or any interaction with Mesa before it merged with Parker to become Pioneer?
A On a very limited basis. Prior to the merger, I was told that I would be reporting directly to Dennis Fagerstone, who was, I think, executive vice-president with Mesa at that time, and that I would be moving to Dallas to report directly to him.
Q Okay. When Mesa merged with these other companies, from your knowledge, are some of the same Mesa employees still with Pioneer?
A There are some.
Q Okay. Dennis – is it Fager- –
A Dennis Fagerstone.
Q Dennis Fagerstone, is he still there?
A Yes, he is.
Q Is he also in Irving, Texas?
A He's in Irving, Texas. He's executive

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vice-president over the international operations.
Q Okay. Do you know who Mesa's environmental person was?
A Prior to the merger?
Q Prior to the merger, yes.
A Johnny Reinschmidt.
Q Is he still with the company?
A No, he is not.
Q Do you know where he is?
A I don't know for sure. I think he's working for another oil and gas company in the Texas panhandle.
Q Okay. So just so I'm clear on this, your understanding is that Johnny Schmidt –
A Reinschmidt.
Q – Reinschmidt was the environmental person with Mesa before the merger, and after the merger, then that was a position that you assumed?
A That's correct.
Q Okay. Now you testified earlier that you were, as I understand it, part of the group that did the due diligence when these companies came together; is that correct?
A I had an individual that worked for me that directly -- that actually did the Phase 1 environmental due diligence.

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Q Okay.
A It was very limited due diligence, just on the operating properties.
Q When you say a Phase 1 due diligence, maybe you could explain to me what that is.
A It's an initial environmental assessment in looking at the records, the current records, the current available records. Also, checking and reviewing the state agency records as far as compliance history, and also making sure all of the federal and state permits are in place associated with the active properties. And then doing an on-site property inspection.
Q Again, that would be with the active properties?
A That's correct.
Q Moving us right to the reason why we're here today, I'm showing you this map which is designated Exhibit 51. Have you seen this map before?
A Yes, I have.
Q Okay. And I have highlighted down here some wells. Some of them are Texas Oil & Gas, but the Mesa, is it pronounced "beer"?
A I'm not exactly sure of the pronunciation. I say "berry."
Q "Berry." Okay.

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In terms of the due diligence, just so I understand, that would not have been a well that would have been part of your Phase 1 due diligence; is that correct?
A That is correct.
Q And the reason is because that was not an active well at the time?
A We weren't even aware of this lease at the time of the merger --
Q Okay.
A -- or of these wells, because at the time of the merger, it was not an active lease.
Q Just so I'm clear on this, the Phase 1 environmental due diligence that you did with respect to, for example, reviewing the records, again, that applied only to operational wells?
A Operational wells and any information that would be available in the files that we looked at --
Q Okay.
A -- of any potential environmental problems.
Q When you do a Phase 1 due diligence with respect to operational properties, what sort of things are you looking for?
A I pretty much stated, you know, what takes place in an environmental assessment. Again, looking at the

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state and federal records as far as compliance history. Looking at the internal records as far as documentation of any environmental remediation projects or problems. And again, taking a physical look at the wells and the locations on the properties that were involved in the merger.
Q And let's just say, for example, you find some problems with compliance history.
A (Nodded head affirmatively.)
Q How does that factor into your role in the merger process in terms of the decision to merge?
A Well, they're so noted, and then they're part of the purchase and sales agreement as far as environmental liability.
Q So those would become, for example, if there's a problem in one area that you've discovered, that could be addressed in the purchase agreement between the two companies as someone else's responsibility?
A Or determining whose responsibility it is moving forward.
Q Okay. As a result of your due diligence with respect to the Mesa properties, were there properties that fell within that, I'll call it, problem area, that there were some questions about Mesa's past handling of the operation?

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A Not, not really. There were some environmental remediation projects that were like in the final phase of being completed, and Mesa had done an excellent job in taking care of those. But those projects needed to be completed, and we were in the process of completing the remediation of those projects.
Q And when you say "remediation," is that a shorthand way of saying cleanup responsibilities?
A That's correct.
Q Where were those properties located, if you recall?
A One in Kansas and one around Odessa. That's been closed with the Texas Natural Resource Conservation Commission.
Q What was the nature of the problems there? Let's start with the Kansas remediation.
A It was a groundwater contamination problem.
Q Resulting from oil production or exploration activities?
A Resulting from a leak in a disposal well. I think. I'm not exactly sure of that.
Q Do you recall what kind of contamination was in the groundwater as a result of that leak?
A It was just an elevated content of sodium chloride.

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Q Do you know what the remediation plan was with respect to Mesa in that case?
A Well, there was one that was inherited by Mesa from another company when Mesa purchased those properties, so again, the project was already ongoing, and it was just where you drilled a series of monitor wells and supply wells and basically just produced and cleaned the water up.
MR. ROSS: For the record, it's my understanding we're reserving objections except as to the form of the question; is that correct?
MR. GALLIK: Correct.
BY MR. GALLIK:
Q Was the water that was contaminated there in Kansas, was that drinking aquifer or just --
A I said Kansas. That's Oklahoma.
Q Oh.
A I'm sorry.
Q Do you know, was it drinking water or was it --
A No, it was not drinking water.
Q How about the --
A It --
Q Go ahead.
A It was removed from any drinking water supply by distance.

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Q Okay.
A So it did not impact the local drinking water supply.
Q And then the remaining issue in Odessa, Texas, what was the nature of that?
A That was an isolated perched reservoir, and by that I mean it's separated from the rest of the aquifer, and we were able to close that on a risk-based closure method and approved by the TNRCC.
Q Okay. The problem in Odessa, was that groundwater contamination?
A Again, it was groundwater contamination, that's correct.
Q Elevated levels of sodium chloride?
A No. This was diesel fuel.
Q Okay.
A And again, that was inherited by Mesa from another company.
Q Okay. And Mesa and Parker dealt with those particular properties in the purchase agreement, I take it, or the merger agreement?
A That's correct.
Q Okay. When did you first learn about the issues or potential issues with respect to the Biere well up in northeastern Montana?

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A I think it was the latter part of 1998 when we became aware of the lawsuit.
Q Would that be the lawsuit that we had filed?
A I think that's correct.
Q So as far as you know, that was the first time that Mesa, or, I'm sorry, Pioneer became aware of these properties in northeastern Montana?
A That's correct.
Q Okay. And do you know, as part of the acquisition or the merger process, whether these wells were even noted in any documents?
A Not to my knowledge.
Q When we were talking -- when we talked today about the contamination or pollution in the aquifer, you mentioned earlier that in Oklahoma there was a problem with one of Mesa's wells that they had acquired from someone else with elevated levels of sodium chloride?
A That's correct.
Q If I use the term "saltwater," are we on the same page with respect to understanding what it is we're talking about?
A I agree with that.
Q Okay. And I noticed, too, in some of the reports that Pioneer prepared, or at least some of the

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consultants, that they define -- well, let me just mark this for you.
(Exhibit 56 was marked for identification.)
BY MR. GALLIK:
Q Exhibit 56, which was produced in discovery, is titled Pioneer Natural Resources' Field Investigation Plan, East Poplar Oil Field. Have you seen that before, sir?
A Yes, I have.
Q Okay. In the first paragraph there, they talk about oil production in the East Poplar Oil Field. Do you see that?
A I do.
Q It uses the word "brine," which is "water having a dissolved solid concentration greater than 35,000." Do you see that there?
A I do.
Q Is that use of the word "brine," is that something that is used in the oil industry?
A Produced water, brine.
Q Saltwater?
A Saltwater.
Q There's a number of terms that can be used?
A That's correct.
Q In terms of your position as operation services

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manager, does the term "pollution" have any particular meaning for you?
A I'm not sure I understand your question.
Q Okay. Well, what does the word "pollution" mean to you?
A Well, the way you describe it, that's a generic term.
Q Right.
A It could be related to soil, could be related to air, could be related to groundwater. .
Q And let's say, for example, the air or water is polluted. Does that mean there's something in there that shouldn't be there? How would you describe that?
A Again, if there's a pollutant that is higher than the permissible federal or state limits, then it could be categorized as a pollutant.
Q Okay. And in terms of Pioneer's environmental policy in general concerning pollution, taking into account your definition, what is Pioneer's policy with respect to pollution?
A Well, Pioneer's current policy in relation to the operation of our properties addressing pollution is to certainly abide by the federal and state guidelines.
Q Does Pioneer have a specific environmental policy concerning pollution of groundwater?

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A Well, again, Pioneer's policy has adapted the guidelines of the federal and the state programs, which dictate the permissible limits.
Q Permissible limits of pollution?
A Well, of certain components. Or maybe not components, but certain items that are listed as pollutants.
Q So I'm clear on this, in terms of how you're defining "pollution," does it become pollution when it exceeds the allowable limit by state or federal law?
A (No response.)
Q When the presence of some other substance exceeds state or federal law?
A I think I would agree with that.
Q Okay. From your experience working in a number of states, are the federal and state standards different with respect to pollution of groundwater in the petroleum industry?
A They're pretty much the same, because they all have to look to the EPA federal programs if they want to be certified on a state-by-state basis.
Q Do you know what the federal EPA standard is for pollution of groundwater?
A Well, it encompasses quite an area that you have to review, and I can't specifically tell you. There

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are certain parameters or limits that are specified as far as the Safe Drinking Water Act.
Q How about let's talk about sodium chloride. Are you aware of any permissible limits of sodium chloride in groundwater?
A I'm not exactly sure what the limit is on sodium chloride. I think it's around, as far as drinking water, public drinking water supply, I think less than 1,000 parts per million.
Q Based upon your experience in the industry, can oil and gas operations cause pollution of groundwater?
A If allowed to escape and migrate its way to a freshwater zone, it can.
Q From your experience -- I think it's inferred in your answer -- it's possible to conduct oil and gas exploration and production without contaminating groundwater; is that correct?
A In most cases. Things do happen that you have no control over.
Q I understand.
A And certainly as a prudent operator, we make every attempt to do that. And by and large, we do conduct operations that protect the freshwater zones where we operate.
Q So --

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A But mechanically, mechanically things can happen that we don't know about until after the fact sometimes.
Q So, in other words, from your experience, you have conducted oil and gas exploration and production in areas involving freshwater where you have not had groundwater pollution or contamination?
A That's correct.
Q You used the word "prudent operator"; is that right?
A That's correct.
Q Okay. What is a prudent operator?
A My definition of "prudent operator" is Pioneer, one that complies with the federal and state rules and regulations related to Clean Water Act and all of the other federal mandated programs. Protect the environment.
Q So as a prudent operator, then, Pioneer knows that oil and gas exploration or production has the capability, then, if not operated correctly, of causing groundwater pollution?
A It could.
Q But Pioneer understands that, though, correct?
A Absolutely.
Q And Pioneer, as a prudent operator, I think it's

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your policy to strive to prevent groundwater prevention?
A We do that.
Q Now does a prudent operator make sure that its operations don't cause groundwater pollution, if that potential exists?
A Well, we have ongoing environmental assessments. We have regular testing schedules on our temporarily abandoned wells, as well as our operated wells, and anytime we have a problem, we immediately address that problem and attempt to correct it.
Q And those answers there with respect to ongoing environmental assessments, testing schedules and the like, does that also apply to the drilling of the well in the first place?
A The drilling of the well itself is -- you know, you first have to get the permit to drill the well, and with those permits come certain responsibilities as far as environmental compliance, and, you know, the state that you're drilling the well in watches that program to make sure that you're in compliance.
Q From your experience in the oil industry, has there ever been a time where any state or federal regulation, that you're aware of, has allowed the pollution of groundwater?

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A No. Certainly not intentionally.
Q Well, you're not aware of any regulation that allows negligence?
A Not any regulation, no.
Q Now you mentioned earlier that in the process of drilling a well, one has to acquire a permit, correct?
A That's correct.
Q Okay. And also a company acquires a lease or some other interest in property from the landowner?
A That's correct.
Q Okay. And then the state and/or federal or other regulatory agencies kind of have a supervisory role in the whole process?
A They do.
Q Okay.
A We have to obtain, we have to obtain permits related to protection of the freshwater zone.
Q Okay. And of all those people or agencies that we've just talked about, whose responsibility is it to make sure that the groundwater is not polluted or does not become polluted by virtue of the operations of the well?
A That's a responsibility for the whole team --
Q Okay.
A -- that, you know, that puts that well package

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together and obtains the permits and operates the well.
Q Okay. Does the landowner have any responsibility for making sure that the water is not contaminated?
A In relationship to what?
Q In relationship to the drilling and operation of the well.
A That's the operator's responsibility.
Q Okay. So the landowner wouldn't have any responsibility for ensuring that the groundwater is not polluted?
A I would certainly think the landowner has some responsibility to his own operations.
Q Okay. "To his own operations," what operations are those?
A In Montana, you know, you've got wheat farmers with a lot of equipment. Those equipments, you know, they're pieces of equipment that run on gasoline, fuel, crank -- motor oil, and they change out their motor oil, and they have, they have an opportunity to let things get into the environment.
Q Sure. In terms of the drilling and operation and abandonment of an oil well, what responsibilities does the landowner have to see that the groundwater is not contaminated by virtue of that well?

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A I'm not sure I know the answer to that question other than go back to the basic oil and gas lease agreement with the landowner.
Q Does the landowner have a duty or a responsibility, from the oil company's standpoint, to do periodic tests of the well?
A Not the landowner.
Q Okay. So would it be fair to say that it's the oil company who is operating the well who is responsible for making sure that the groundwater does not become contaminated?
A That's my understanding.
Q Okay. And that's the way, from your experience, it's been in the oil industry since you started?
A That's correct.
Q Okay. Now would you agree with me that if the oil company who has the well out in the farmer's field conducts its operations in a prudent manner, as you've testified earlier, that that landowner should not expect his groundwater to become contaminated?
A I would agree with that.
Q Okay. Now I believe you testified earlier that Pioneer attempts to conduct its operations in a prudent manner; is that correct?
A That's correct.

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(Exhibit 57 was marked for identification.)
BY MR. GALLIK:
Q Now Mr. Dover, I'm going to hand you what I've marked as Exhibit 57. You can take a look at it. It is the answer of defendants Mesa Petroleum and Pioneer Natural Resources to our eighth amended complaint, and you can take a look. I will be directing your attention to page 6 of that once you've had a chance to look at it.
(Pause.)
THE DEPONENT: Okay. I've seen this document.
BY MR. GALLIK:
Q Okay. Did you assist in the preparation of that document, to your knowledge?
A I'm not sure.
Q Okay. That's fair.
I'd like to turn your attention to the fourth affirmative defense, which is assumption of risk, at the bottom of page 6 and ask you to read that, please.
A Fourth affirmative defense?
Q Yes. Let me point it out to you to move things along.
A Right, right. You say you want me to read that?
Q Just read that to yourself there.

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A Okay.
(Pause.)
THE DEPONENT: Okay.
BY MR. GALLIK:
Q And just so I can read this into the record, it says that, "Plaintiffs' claims and damages are barred in whole or in part by assumption of risk, because plaintiffs voluntarily assumed the risk of conditions, events, occurrences and damages."
In terms of the factual basis for the plaintiffs assuming risk of groundwater contamination, can you tell me what facts that you have knowledge of that the plaintiffs in this case assumed that risk?
MR. ROSS: I object to the form of the question to the extent that it calls for a legal conclusion, but you can answer. Go ahead.
THE DEPONENT: I don't think I can address that.
BY MR. GALLIK:
Q And the reason you can't address that is you didn't understand the question?
A I understand the question, but I'm not understanding – I am not sure I understand "the risk of conditions, events, occurrences and damages."
Q Okay. Well, let's just take it apart one at a

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time, piece by piece here.
Are you aware of any facts to support the contention that the plaintiffs assumed any risk that their groundwater would be contaminated by virtue of Mesa's oil operations in the East Poplar Oil Field?
A And again, I'm not sure what plaintiffs you're referring to, looking at this map, and I could only, I can only tell you what I see from this map, and that's a limited area of a saltwater plume.
Q Okay.
A And, you know, the impact of that plume in relationship to this total area is indeed very small.
Q And the map that you're referring to is Exhibit 51?
A That's correct.
Q Okay. And the area that you were pointing to is around the Biere well?
A Is around the Biere well, that is correct.
Q You would agree with me, though, that a landowner – if an operator conducts its oil and gas explorations in a prudent manner, that the landowner should not expect to have his groundwater contaminated; is that correct?
A I would agree with that.
Q If a landowner's groundwater becomes

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contaminated, or let's use the word "polluted," by Pioneer's oil exploration, production, or abandonment procedures, what action can the landowner expect Pioneer to take in response to that pollution?
A Well, the first thing we would do is to assess the extent of the pollution by a monitoring program, and then once we assessed the extent of that plume or that damage, then I'm sure, in working with our legal department and the state and federal agencies, we would develop an action plan.
(Exhibit 58 was marked for identification.)
BY MR. GALLIK:
Q Okay. I'm handing you, Mr. Dover, what's been produced by Mr. Ross as Pioneer's community relations plan. Have you seen that before?
A Yes, I think I've seen this.
Q So in terms of the East Poplar Oil Field, does this reflect how Pioneer responds to problems with respect to groundwater pollution, at least the first step?
A I think it is.
Q Okay.
A I think it's a positive direction of a response.
Q Okay. And this is dated March of 2000, correct, that document?

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A That's correct.
Q And that's Exhibit 58?
A That's correct.
Q Okay. Did you have any role in the development of this particular document?
A No, I did not.
Q Okay. Did you have any role in the decisions that led up to the decision to go forward with the community relations plan?
A I was involved in the discussion and draft of it.
Q Okay. And Pioneer's goal with respect to the community relations plan for this disposal/production well site is what, in general, if you could explain?
A Would you repeat the question?
Q Sure. What's Pioneer's goal with respect to its community relations plan concerning the former Mesa production or disposal well?
MR. ROSS: Again, I object to the form of the question to the extent it calls for a legal conclusion, but you can go ahead and answer to the extent you can.
THE DEPONENT: In general, basically lay out, you know, to the community what our action plan is.
///

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BY MR. GALLIK:
Q Sure.
A And make every attempt to keep them informed as we progress with our action plan.
Q Okay. And I see in the first paragraph there it talks about the National Contingency Plan of Code of Federal Regulations, Section 300, et cetera. Do you see that?
A I do.
Q Have you had any involvement, prior to the East Poplar wells, with the National Contingency Plan regulations?
A No, I have not.
Q Have you reviewed the National Contingency Plan regulations prior to this particular case?
A No, I have not.
Q Have you reviewed it since this case developed?
A On a limited basis.
Q Okay. In terms of Pioneer's community relations program – strike that.
It said, in the first paragraph, "Pioneer is conducting a remedial investigation of this area to characterize environmental conditions at the site and determine whether any response actions are warranted." Do you see that in the first paragraph?

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A In the introduction?
Q Yes, the introduction.
A Yes, I do.
Q Okay. As we sit here today in June of 2001, over a year after this, do you know whether Pioneer has determined whether any response actions are warranted?
A As I'm aware of, we have made a number of responses. You know, we initially, once we found out about the lawsuit, then we made a physical inspection of the old well sites with Mr. Lockman, the current landowner. We found nothing on the sites that indicated any problems. Decided to go back and do some soil sampling around; first, to locate the old well sites and take soil samples. And then after that, I think we drilled eight monitor wells. Completed those wells, took samples, and reported those results to the EPA. And I am pretty sure the EPA shared that with the tribe.
(Exhibit 59 was marked for identification.)
BY MR. GALLIK:
Q I'll hand you what I've marked Exhibit 59, which is just two pages of the document titled Field Investigation, Biere Well Evaluation, Poplar, Montana, and I have the entire document here if you would like to look at it.

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A (Nodded head affirmatively.)
Q Does that basically -- does that reflect at least two of the pages of the document that you're talking about with respect to reporting the results to the EPA?
A It does.
Q Okay. Was the decision, to go forward with the community relations plan and subsequently events that led to this document that was submitted to EPA, a decision made by Pioneer or was that mandated by the EPA?
A I don't know the answer to that.
Q Okay. If Pioneer's operations cause groundwater pollution, is it Pioneer's policy to clean up that pollution?
A It's Pioneer's policy to determine the extent of that problem, and, yes, develop an action plan with all of the available options to attempt to clean that problem up.
Q We talked earlier about the number of people involved in oil and gas exploration/development operation: landowner, operator, state and federal regulations. From Pioneer's perspective, whose responsibility is it to determine if oil and gas operations have caused pollution?

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A Well, it's an ongoing responsibility. I mean, we're continually monitoring our properties. We have field people, our field supervisors and field lease operators, that monitor, on a daily basis, the well and the lease operations.
Q So from the sound of your answer, then, is it fair to say it's the oil company who is responsible to determine if the operations have caused groundwater pollution?
A I would agree with that.
Q Does Pioneer have a policy for cleaning up spills of oil or saltwater that impact the surface of a property owner's property?
A We do.
Q And what is that?
A It's to immediately take action to clean the contaminated surface area. We immediately clean it to 5 percent total petroleum hydrocarbon, and then within a year we get it reduced to 1 percent or below.
Q So as I understand it, then, if you have an area where there has been a spill, you would take some samples of the soil to determine what the percentage of petroleum hydrocarbons would be in the soil?
A That is correct.
Q Okay. And in the first year, the goal is to get

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it to a reading of 5 percent?
A Immediately.
Q Immediately?
A To get it as soon as possible.
Q Okay.
A And that is, that is part of the rules with the Texas Oil Commission, and we've adopted those rules within all of the states where we operate.
Q Okay. Are the Texas rules, from your experience, more stringent than rules in other states?
A I would say yes.
Q Okay. And I take it that Pioneer's policy would be to follow the, if there was a rule that was stricter in Montana, let's say, than --
A We follow the stricter rule.
Q Okay. With respect to oil and gas exploration and production, is it common to be operating those types of wells in areas where fresh groundwater aquifers exist?
A You drill, you know, you strategically locate a well hopefully where you have hydrocarbon deposits, and there may or may not be groundwater present.
Q Okay. From your experience over the past 30-plus years in the industry, has it been your experience to drill in areas where fresh groundwater exists?

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A That's correct.
Q Okay. So it's not uncommon, then, to find freshwater aquifers where you're exploring or drilling?
A In most areas where we have drilled, freshwater aquifers are present.
Q Okay. What investigation does Pioneer do in the normal course of its business concerning the location of freshwater aquifers where you're conducting your oil and gas operations?
A One of the first actions that takes place is that we have to get a water board letter, is what we used to call it. I think it's issued now in the state of Texas by the TNRCC, or the Texas Natural Resource Conservation Commission, and that letter basically states how deep you have to set surface casing to protect the deepest freshwater zone.
Q And then you take that information and you apply it to –
A Apply it to the actual setting and seaming of the surface casing.
Q Before you drill it, are there geologists who have studied the area to let you know generally where the aquifers may be located?
A Normally we get that information from the

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respective state --
Q Okay.
A -- because they have very up-to-date water maps.
Q Okay. When you get those maps from the state, then, do you do any further work to confirm that?
A We don't necessarily get the maps. We get the information related to how deep we need to set the surface casing to protect the freshwater zones.
Q Okay.
A And normally we have enough experience in the areas that we're operating from wells that we've already drilled.
Q Does Pioneer have any ongoing oil and gas leases in the East Poplar Oil Field?
A We do not.
I guess a correction I would make, other than our involvement with this current problem.
Q No, I understand that.
And those wells, as I understand it, were abandoned some time ago, correct?
A Initially in 1984.
Q Correct. And my question, I think, was directed toward ongoing producing wells.
A We do not have any.
MR. GALLIK: Okay. Maybe we could take a

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quick break here?
MR. ROSS: Sure.
(Recess taken from 09:54:15 to 10:03:17.)
BY MR. GALLIK:
Q Mr. Dover, you testified, I believe, that Pioneer learned about the potential problems or at least the allegations of groundwater pollution in northeastern Montana in, I believe it was, 1998; is that correct?
A That's correct.
Q Subsequent to learning about the complaint being filed, have you done any investigation to determine the base of freshwater below the Biere wells up in the east Poplar oil unit?
A Well, as I've stated earlier, we have drilled a number of monitor wells around the old Mesa Biere wells down to the Bear Paw shale.
Q And what freshwater aquifers are located below the Biere well, if you know?
A Well, I'm not that familiar with the freshwater aquifers, but I was present when we drilled the response wells on the monitor wells, and there are a couple of freshwater intervals that vary from 5 to 30 feet –
Q Okay.
A – if I remember correctly, from zero elevation

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to the top of the Bear Paw shale.
Q So to move things along, is it fair to say that you're aware that the wells were drilled, that there are some freshwater aquifers, but to identify them by name, you're not capable of doing that?
A No, I'm not.
Q Do you know – let me back up.
Have you been to the Biere well?
A Yes, I have.
Q Okay. How many times have you been up there?
A Two or three different times, and two or three days' interval each time I went.
Q Did you stay at the Sherman?
A I did. Where else would you stay?
(Laughter.)
BY MR. GALLIK:
Q You testified you have been there two or three times. Let's take them apart one at a time. What was the purpose of the first trip up there?
A The purpose of the first trip was to contact Mr. Lockman, the landowner, and get him to physically take us to the old well sites and attempt to locate. And as you, I'm sure, you understand, there was nothing on the surface. The well heads had been plugged and abandoned back in '84 and '85 and cut off

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4 feet below ground level. So he proceeded to, as best he could remember, show us where the old wells were located.
Q Okay.
A And we staked those locations on that first visit, prospective locations.
Q Did you talk with Mr. Lockman about his water, drinking water?
A He informed us that he had two wells that went bad or became contaminated.
Q Did he indicate to you when he learned that the wells had gone bad?
A I don't remember what year.
Q Did he tell you what his source of freshwater was at the time?
A At that time I think he was getting his freshwater supply from one of those two wells located on his property.
Q So as I understand it, then, one of the two water wells on his property he was able to get drinking water from?
A That's correct. Well, I don't know if he – I can't answer about the drinking water.
Q Okay.
A I don't know if he was buying bottled water at

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that time or just using the water from those water wells to feed his stock, other than drinking water.
Q Do you know, today, whether he gets his drinking water from the well or from bottled water?
A I think – well, I'm pretty sure that he is being supplied bottled water by Mesa Petroleum right now through a vendor, a bottled water vendor.
Q Is that part of the EPA compliance order, or is that something separate and apart that Pioneer has done?
A I think that's part of the EPA compliance order.
Q You used the word "Mesa" is supplying the water to him?
A I didn't mean Mesa. Murphy.
Q Murphy. Okay.
So the first trip, as I understand it, then, was to meet with the landowner and to attempt to locate the old sites, and you staked the approximate sites; is that correct?
A That's correct.
Q And then the second trip up there – by the way, did you happen to meet with any of the plaintiffs or any other landowners up there who had complaints about their drinking water?
A Did not.

Q · Okay. The second trip up there, what did you do on that second trip?
A The second trip, I'm pretty sure that is when we got a backhoe and a survey crew and found the actual well locations; dug them out, the old saltwater disposal well, the Biere 1-22 well and the relief well 25 feet north/northeast of the 1-22 well.
Q And when you say "dug them out," I take it you dug the soil around and found what was left of the casing?
A The top of the casing stub, that's correct.
Q I take it on that second trip you were able to find all of the wells?
A We were.
Q Okay. And once you dug out around the wells, what did you do then?
A Well, then the next – of course, we took soil samples and did not find any, any impact in the soil around the wells from pollution.
Q Okay. And what – go ahead. I'm sorry.
A And then the next phase, I can't remember. I think that was early in 2000, and then May and June of 2000 we drilled – and I may be getting my months run together.
Q Sure.

A But May and June of 2000, we drilled the eight monitor wells.
Q Let's back up a second. You took some soil samples, and as I understand your testimony, you didn't find any, I guess, evidence of contamination?
A By just visibly looking at the soil and smelling the soil and looking at it prior to getting a soil analysis, but the soil was very clean around the wells. Of course, we're only digging down 4 feet.
Q Okay. What was the significance of that finding to you?
A Well, the first inclination is we didn't have a problem.
Q And if the soil had been contaminated or there was evidence of pollution, what would that have told you or suggested to you?
A Well, it would have suggested that there might be an active leak around the old well, the old pollution.
Q Okay. What types of leaks can an oil well have?
A Well, if there's no pressure, it's not going to have a leak –
Q Okay.
A – first of all. It could have a leak outside the casing coming up between the casing and the formation. It could have a leak up through the

internal part of the casing.
Q So if you would have found some evidence of the soil being contaminated, is it fair to say that there could have been a leak on the outside of the casing with the water flowing up?
A Well, I would agree with that.
Q Okay. How about the second scenario, which was a problem with the internal part of the casing? Would you expect, if you saw soil contamination, to have a problem with the internal part of the casing?
A There may or may not be.
Q Okay. If water is coming up on the outside of the casing, is that a problem with respect to the cement bond between the casing and the formation that it's in?
A This is where it gets really complex when you're looking at something like that, because in our opinion, that well was plugged properly.
Q Okay.
A It was approved. The plugging procedure was approved by the Montana Oil and Gas board at that time. And when they went back in '85 and replugged that well, it appeared to hold for a number of years. There may be other active parameters that could have caused that seal to break down around that well beyond

our control, unrelated to how the well was plugged properly or not plugged properly, by continuing injection into the Judith zone.
Q By other oil companies?
A By other oil companies, by continuing to cause that zone to be overpressurized and possibly cause the matrix or the formation, if you will, to fail around that well bore.
Q Is the zone that you just talked about overpressurized?
A It appears to be overpressurized.
Q Are you aware of any oil companies that have continued to inject into that zone or may be injecting into it today?
A I am not for sure, but I think Murphy does have a standby well that, in the event they need to inject into it on a limited basis, they do. I think it's to the north of us. I think. I'm not exactly sure which well it is.
Q When you talk about the zone being overpressurized, and I'm trying to characterize your testimony, so correct me if I misstate, the zone being overpressurized and causing a breakdown of the seal of the –
A Just causing, if you will, causing the formation

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itself to fracture.
Q When you say "the formation," that would be the underground formation?
A That would be the formation surrounding the well bore itself, out away from the well bore. In other words, you have cement protecting the casing.
Q Right.
A Then away, immediately away from the well bore you have the formation that you drill through.
Q So in my limited knowledge of this industry, what you're saying, then, is that by virtue of overpressurizing the zone, the bond between the cement and the formation that it was originally cemented to somehow becomes fractured, which allows the --
A Well, the cement, the best I can tell, the cement, it still maintains its integrity because it's much more dense and harder than the surrounding matrix or the formation, so what really breaks down is the formation out away from, a larger radius away from the well bore.
Q Okay. So the seal that breaks down is that seal between the cement and the formation?
A Correct.
Q Okay. And what you're saying is it's not necessarily the cement that breaks down, but, instead,

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it's the formation that the cement was originally sealed to?
A Right. That's correct.
Q If there is a breakdown of the seal, how would a person walking along the surface know that there has been a problem with that seal below the well cap?
A I don't think you would if it's not coming to the surface, if it's just coming up to a certain level in the freshwater zone and then moving laterally instead of horizontally or vertically.
Q So in terms of your work, it's fair to say that the subsequent investigation that Pioneer did with respect to drilling monitoring wells confirmed that there was a leak or there is a leak in one of these Biere wells; is that correct?
A I can't say that it confirms there's a leak. It does confirm that something is actively going on in the vicinity of Biere 1-22.
Q Okay.
A And we have not been able to determine if it's coming up inside the casing or outside the casing or coming by, or coming by the well itself.
Q So you're not sure if that Biere well is the source of the problem?
A That's correct.

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Q Okay. If the Biere well is not the source of the problem, what other sources are there that could be the problem?
A It could be all of the other wells that have been drilled in that area, the active wells as well as the abandoned wells.
Q And the active wells, are those the Murphy wells?
A Some of the active wells are Murphy wells, but some of the wells that other operators have plugged in the past.
Q Okay. So, for example, to the north is TXO Saltwater Disposal No. 1, Texas Oil & Gas, which is now Marathon. Is that --
A That's a possible source.
Q That's a possible source?
A (Nodded head affirmatively.) At least in my opinion.
Q Okay. So as I understand it --
A I don't want to mislead you in this. We do think something is actively going on around the Biere well. And, you know, it points that there is, there is something that's occurring there. It doesn't appear, doesn't appear to be a large area.
Q When you say it doesn't appear to be a large area, what doesn't appear to be a large area?

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A Well, the saltwater plume contamination, if it is occurring from that well, it looks like it's less than half a mile in the extended area --
Q Okay.
A -- basically to the west/southwest.
Q And as I understand this map, the various colors that we see reflect differing levels of contamination; is that correct?
A I guess I would say the various shades rather than color.
Q Correct. That's fair.
A And the varying shades would indicate different levels of contamination.
Q Okay. And with respect to the Biere well, when you testified earlier, you're talking about a darker shade of contamination around the well?
A That's correct. Right.
Q And that darker shade extends out, did you say, a third of a mile?
A Plus or minus a half mile.
Q Okay. If, let's say, for example, there is another contributing source, another saltwater disposal well in the area that has been abandoned, how could that, how could that contribute to the problem, from your investigation?

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A Well, again, there could be a possible leak from inside the casing string or outside the casing string.
Q If there are other disposal or production wells in the same area of an overpressurized zone, could the seal between the other disposal wells have also been broken in those wells?
A I think it could.
Q Do you have any indication that this zone is overpressurized?
A Not currently. And the reason I say that is because we haven't drilled down to the Judith yet.
Q Is that something that Pioneer intends to do?
A We do.
Q Okay. And when do you intend to drill to the Judith?
A We're waiting on our permit from the EPA in Denver at the moment. And as soon as we locate a drilling rig and get permission from the landowner to build the location and can secure a drilling rig and obtain our permit from the EPA, then we plan to put in place our action plan to drill a number of injection wells around the old Biere well down to the Judith formation.
Q Okay. What's the purpose, pursuant to your action plan, of drilling injection wells?

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A The EPA prefers to call them injection wells. We do not. You know, they were to be relief wells and wells that we are going to use to plug -- to pump in a product to plug off any suspected leak from the Judith around the old Biere well.
Q So you're using another well to inject a substance down to the Judith formation --
A That's correct.
Q -- to prevent the escape of the water or the contaminants from that formation up your --
A Vertically up into the freshwater zone, that's correct.
Q What is that substance that would be injected?
A It's a Halliburton product called Injectrol-U, and it basically consists of silicate sand and sodium hydroxide --
Q The purpose -- I'm sorry.
A -- that forms. At elevated temperatures, when it comes into contact with calcium, it sets up a polymer, a gel.
Q The work and investigation that you're doing, and permit acquisition, are there any other oil companies that are assisting you in the efforts to figure out what's going on in this particular location?
A No.

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Q Has Pioneer, to your knowledge, requested the assistance of any other oil company in its efforts to investigate what is going on in this portion of the oil field?
A We have had some discussions with Murphy from the standpoint that they're going to drill some -- it's my understanding they are also going to drill some monitor wells to the north of us.
Q Okay. How far to the north, if you know?
A I'm not sure.
Q So it's your understanding that Murphy is going to drill some wells to the north. Did Pioneer ask Murphy to participate?
A No. Did not.
Q The wells that you will be drilling, it sounds like this summer. Is that a fair characterization?
A Okay. As I stated earlier, we've already drilled eight monitor wells.
Q Correct.
A And we're going to drill, I think, an additional eight to ten more monitor wells at the request of the EPA.
Q Okay.
A And then we're also going to drill the injection wells around, 90-degree north, south, east, and west,

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around the Biere well.
Q Okay.
A We're going to drill three new wells around the Biere, enter the old relief well, and use that as one, as initially as a monitor well as we inject the product to make sure that we have a positive seal. And then once the EPA is satisfied and we're satisfied, then we will pump the sealing product into the old relief well and then monitor -- leave those wells open for a while to be able to monitor the results of that. And then once the EPA and we're satisfied that we have a seal in place, then we'll plug those wells.
Q Okay. You mentioned earlier that, as I understood it, that part of the purpose of the drilling was to determine if the zone is overpressurized, or would that be a byproduct?
A That would be a byproduct.
Q Okay.
A Our purpose is to drill down to the Judith to enable us to place a seal at the Judith formation.
Q As a byproduct of the drilling, is it possible to learn if the zone is overpressurized?
A It is.
Q Okay. And how, how will you learn whether the

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zone is overpressurized by virtue of drilling?
A Well, we, based on our previous information in the area, when Mesa drilled the relief well in 1985, we have pressure information from that period of time. We'll utilize that pressure information to make sure we have our fluid column weighted up high enough to control the well, and then once we get the well drilled, we will clean the hole out and then take recordings of pressure and temperature.
Q If it's determined that the zone is overpressurized by virtue of your investigation, are the steps that you're taking with respect to injection of this substance sufficient to protect this from happening again, that being a breaking of the seal?
A We think it is, because we think with time – since 1985, fewer wells were allowed to continue to inject into the Judith, and there's only one remaining well that is, to my knowledge, is used on a limited basis by Murphy, and with time we think the pressure is dissipated.
Q What sort of time are we talking about?
A Well, from 1985 to today.
Q Okay.
A Again, I don't know how much has dissipated, but we expect that it has dissipated some.

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Q Okay. And you expect it to dissipate again in the future going forward; is that correct?
A That's correct.
Q Okay.
A And the purpose of this sealing material is that we can inject it at a lower volume and a lower pressure than you can cement, and we feel very confident that we can seal off any fractures that have been created in the formation.
Q Okay. So I'm clear on this, the material that's being injected will stop the continued flow of saline from the Judith up the well?
A That's correct.
Q Okay. But it has no effect on the current contamination that exists in the aquifers that are polluted?
A I would agree with that.
Q Okay. You mentioned earlier that the EPA likes to call them injection wells, but I take it Pioneer doesn't like to call them injection wells?
A Well, the only reason we're drilling these wells immediately is to inject a product. Normally when you get – to inject a product for a very limited period of time to put a permanent seal in place around this well. Once we've done that, the well will not remain

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as an injection well. We'll plug it.
Q Okay.
A Normally when you get an injection permit, you're talking about a long-term operation of continuous injection of a fluid.
Q In order to monitor what happens once this product is injected, will those monitoring wells stay in place, then, for a period of time?
A We're still working that out with the EPA, and it's my understanding that at least they will remain for two years; and then at that time, based on samples and the resultant analysis of those samples, the EPA will tell us how much longer we need to keep those wells in place.
Q Okay. When water or oil production – when the water from the Judith formation comes up the well, I take it it's under pressure; is that correct?
A We assume that it is, that's correct.
Q And that's the reason why it's moving forward to the surface, correct?
A That's correct.
Q Okay. If water is coming up, moving along the well casing toward the surface, before it reaches the surface is it possible for that water to contaminate other zones before it reaches the surface?

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A I think there's a possibility if it continued to migrate. But one thing I think you need to understand, too, there's a thick shale member on top of the Judith River, the Bear Paw shale, that is about 600 to 700 feet thick, and placing a seal in the Judith River below that should prevent the migration, at least at this location –
Q Okay.
A – into the freshwater zone.
Q The reason I ask the question, I'm trying to understand. If we have water coming up from the Judith formation which is contaminating groundwater below the surface – is that correct?
A (Nodded head affirmatively.)
Q – if it's moving up toward the surface and getting into the freshwater aquifer, we have pollution of that aquifer; would that be fair?
A It could be causing pollution in the freshwater zone around that location.
Q Okay. And that water is coming from a depth which is – it's a deeper depth than the freshwater aquifer, correct?
A That is correct.
Q Okay. At the same time, that water from the Judith is not reaching the surface, from your

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investigation?
A We, from our investigation, we haven't seen that it's reaching the surface.
Q Okay. So when it comes up toward the surface, then, assuming it's coming up toward the surface, when it reaches that aquifer, is it then spreading out into the aquifer?
A That is a possibility.
Q Okay. From your trips up to Poplar, or your work on this case, do you know if any landowners in the area have ever relied upon the water in that aquifer for drinking purposes?
A I don't know that for sure.
Q Okay. You don't have any personal knowledge?
A No, I don't.
Q Does Pioneer have any other operations ongoing in this country on lands belonging to Native Americans that you're aware of?
A I don't think so.
Q Okay. Do you know if the area of the East Poplar Oil Field that we're talking about today is considered to be reservation lands by the Fort Peck Tribe?
A It's my understanding that this lease is within the boundaries of the reservation, but it's located on fee property –

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Q Okay.
A – belonging to Mr. Lockman.
Q Okay. During the course of your work in the East Poplar Oil Field, have you also been working not only with the EPA but also the tribal offices?
A I've had very limited contact with the tribal offices. I have talked to Debbie Madison a time or two.
Q Okay. With respect to the various regulations you testified earlier that exist concerning oil exploration and development, does Pioneer have an education program that it follows with respect to educating its employees about these various rules and regulations and any changes, for example, in those regulations?
A You want to repeat that again?
Q Sure. I'm just asking about the inhouse education program of Pioneer.
A (Nodded head affirmatively.)
Q You testified earlier and we all know that this is a fairly regulated area –
A Um-hmm.
Q – that being oil and gas production; is that fair?
A (Nodded head affirmatively.)

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Q Regulated by state and federal agencies?
A That's correct.
Q And those rules and regulations sometimes change?
A That's correct.
Q Okay. Does Pioneer have a program that it follows to educate employees about the current rules and regulations and any changes to those rules and regulations?
A We do. We have what we call a waste management manual that we have published. All of our field personnel, as well as our office personnel, have a copy of that, and we do conduct ongoing training. We send our employees to the various seminars that are conducted by the various state and federal agencies: the Texas Railroad Commission, the TNRCC, the EPA.
Q With respect to your program in the East Poplar Oil Field, who have you been working with at the EPA?
A Nathan Wiser.
Q I take it he's made various document requests from Pioneer?
A He's made numerous requests.
Q And that the EPA issued an order, as I understand it, an administrative order, correct?
A That's my understanding.

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Q Okay. And part of that order was to supply drinking water to some of the residents who live up there; is that correct?
A That was the first action that had to be taken.
Q Okay. And another part of the order was to, as I understand it, was to set forth some sort of proposed remediation action; is that correct?
A That's correct.
Q And the efforts that you've testified to here today from Pioneer's standpoint, that's in response to the EPA's order with respect to a remediation plan; is that correct?
A That's correct.
Q Okay. Now the remediation plan – by the way, is Pioneer a party to the appeal of that EPA order by Samson?
A I don't know the answer to that question.
Q In terms of a remediation plan that EPA has requested the named companies to prepare, is there more than just identification of the problem with respect to the remediation program?
A I've read the order, and what I remember about the order is that we had to:
Supply an alternative drinking water source.
That's been accomplished.

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Supply all available information related to the wells.
Q I take it that's been accomplished?
A That's been accomplished.
Prepare a monitoring program, which, we've accomplished that. Submit that.
And then prepare and submit a remediation program, and we've done that.
And we're now waiting on EPA approval of that injection permit and that response plan.
Q Now the remediation program that you've testified to today, as I understand it so far, has to do with stopping further contamination from the Judith River formation?
A That's correct.
Q Is there requirement from the EPA to submit a cleanup plan as well?
A We're not into that phase yet.
Q Okay. Have you given any thought, Pioneer, has Pioneer given any thought to the cleanup phase of that order?
A Again, we're still in the investigation stage, and we need to drill another ten monitor wells to determine the extent of the contamination and exactly what's happening and then determine the relationship

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of what's occurring here and what's occurring in the areas surrounding the lease.
Q Have you had any experience with cleanup of underground aquifers in other parts of the country?
A I have. In some cases you can do it, and in some cases you can't do it.
Q In what types of cases can you not clean up the aquifer?
A Again, that's hard to define specifically, but it would be determined by the extent of the contamination or pollution and whether or not you could physically inject and remove producing -- and clean up and remove that product. Again, it depends on the type of formation that you're dealing with --
Q Okay.
A -- and whether or not it's got enough porosity and permeability to do that.
Q From your experience, where it sounds like you have participated in cleaning up aquifers -- is that correct?
A That's correct.
Q -- how is that accomplished?
A By drilling a number of producing wells, say, at the edge of the plume and then drilling injection wells close to the source of the problem, injecting

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water and then capturing that water on the peripheral wells or the wells on the edge of the plume. You would be injecting clean water, pushing the contaminated water to those producers, and then, of course, you would have to dispose of that water that you're producing.
Q So, in other words, you're flushing out the aquifer, then?
A That's correct.
Q And has Pioneer done any investigation into how large the aquifer is that we're talking about in the East Poplar Oil Field?
A Not the total field. Just in the area around the Biere leases.
Q Okay.
A We think that's quite small in relationship to the total problem.
Q Okay. So as I understand it, your testimony, and, again, I'm not trying to put words in your mouth, but is it your testimony that the aquifer where there is a potential problem around the Biere well is a fairly confined, discrete area that is somehow different than the rest of the aquifer in that area?
A I don't know that I would agree with that total statement. I think what we see at this point is it's

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a limited contaminated area around the Biere, and as far as the relationship to the rest of the field, I don't know.
Q Okay. Looking at Exhibit 51, when you say it's a limited contaminated area, is it your testimony that, for example, that it's limited because it's darker by virtue of the color here with respect to the levels of sodium chloride?
A Well, and also because of the way the fluid moves through that freshwater aquifer, the gradient. The gradient tends to move west and southwest.
Q Toward the river?
A Toward the river. And certainly doesn't migrate to the north or to the east.
Q If the zone is overpressurized -- well, strike that.
The aquifer, you testified that it's not possible for the water in -- the aquifer that's contaminated, I take it that's what you're testifying, is flowing to the west toward the river; is that correct? Is that the water we're talking about?
A I think what I said is that if it is moving, it's moving to the west and to the northwest -- or southwest.
Q Okay. Toward the river?

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A Toward the river.
Q And that's the freshwater aquifer that's moving?
A Well, according to the USGS reports, that's the natural gradient of the way water moves through the freshwater zone.
Q Okay. Is it possible, from your investigation or even your past experience, for the freshwater aquifer to move upgradient?
A No. I don't think it would do that.
Q Okay. So looking at the Exhibit 51 again, the area of contamination that we see to the north is identified by the USGS?
A That's correct.
Q From your analysis, that pollution would have to be coming from the north of the Biere well?
A That would be my assumption.
Q Okay. From some other operator?
A That's correct. There could even be some naturally occurring contamination, because this is a highly fractured zone at the producing formation level, and you have a very unnatural high temperature in a shallow depth, which indicates there could be some geothermal areas in this field. And if you have natural fractures that could be occurring, regardless of whether there's any oil and gas production

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occurring in this field, that could be occurring.
Q Okay. Do you have any evidence of any naturally occurring fractures at this time?
A Well, we just have the evidence of fractures at depth with the producing zone, production zone, and then evidence from seismic information that there could be some fractures that migrate closer to the surface.
Q Okay.
A I'm just saying there's a possibility that some of the pollution could be naturally occurring.
Q Okay. And from your investigation, it's a possibility?
A It's a possibility.
Q Okay. You've identified no specific sources?
A No, no. Well, other than from the Charles --
Q Okay.
A -- through naturally occurring fractures.
Q And have you identified --
A And channels.
Q And channels?
A And channels, but we haven't identified any of those.
Q We were talking earlier about the educational program, if I may call it that, that Pioneer has with

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respect to employees. How does Pioneer determine or confirm that its operations that are ongoing in the field are in compliance with the rules and regulations of the various regulatory agencies?
A We have ongoing surveys and reports that have to be conducted. We have mechanical integrity tests that have to be conducted annually on a number of our producing wells, as well as our injection and saltwater disposal wells.
And as far as a plugged and abandoned well, you know, the wells that we plug are plugged in accordance to the state and federal rules and regulations. And when that well is properly plugged and we cut it off 4 feet or 3 feet below ground level and all the cement plugs have been properly installed, there's no reason to assume that that well is going to cause a pollution problem in the future.
Q You testified earlier that from your review of the records, you thought that Mesa properly plugged and abandoned the Biere wells?
A At that particular time, it was approved by the Montana Oil and Gas board, their plugging procedure, and I have to assume that the well is plugged properly.
Q So your testimony, then, that it was plugged and

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abandoned correctly is because it was approved by the board?
A That's correct.
Q Okay. Have you reviewed the records for those wells to determine if, in fact, from your experience, that those wells were properly plugged and abandoned?
A We have very limited records. As you know, those wells were plugged in '84 and '85, and Mesa and Pioneer merged in '97, and most of those records were not available.
But the limited records that I've looked at, it does appear that that well was properly plugged and that there was enough cement and cement plugs placed in the proper place that that well should not be a problem.
Q Okay. Your review of the records also indicated there was a problem with the plugging and abandoning of those wells, or at least one of the wells?
A There was a problem when they first moved on the producer to plug it. They could not pull the tubing, and they got permission from the Montana Oil and Gas board to leave the tubing in place and perforate and set their plugs through the tubing and leave the tubing in the well and plug the well with the tubing in it.

Q Okay. Is that an unusual procedure for plugging and abandoning?
A It's not a normal procedure.
Q Okay.
A But they were having problems, obviously, getting the well killed.
THE REPORTER: Killed?
THE DEPONENT: Yes. What I mean by that is the well was flowing on, and they were attempting to weight up enough mud to stop the flow. And again, these are assumptions in reading the well file.
BY MR. GALLIK:
Q Right.
A And they made a determination, at least in my opinion, that the only way to plug that well was to leave the tubing in place, since they couldn't get it pulled, get permission from the state to go through tubing and perforate and set their cement plugs.
Q Okay. Have you seen that type of plugging procedure done in other --
A Yes, I have. It's not an uncommon practice.
Q Okay.
A It's where you run into problems and you've got pressure problems. You do work with the state agencies. In many cases they will give you permission

to go ahead and plug that well by that method.
(Exhibit 60 was marked for identification.)
BY MR. GALLIK:
Q Okay. I am handing you Exhibit 60, which is from the well record for the Mesa well, I think, that we've been talking about here.
A Right.
Q You've seen that document before, right?
A I have.
Q And as I understand it, this record was prepared as a result of Mesa abandoning the well; is that right? The problems developed during --
A The first time they plugged it in 1984, that's correct.
Q Okay. And looking at the entry on September 12 of '84, that seems to be the first indication that they were having problems with abandoning this well; is that correct?
A That's what it appears to me.
Q When a person abandons a well, they inject the well casing with cement; is that correct?
A (No response.)
Q How does one go about abandoning the well as they're attempting to do it here?
A Well, the normal procedure is that if you can,

you pull the tubing, and then you set a plug across the producing formation, and I think extending at least 50 to 100 feet above the uppermost perforation. Then you come up and set a plug across the base of the surface casing, I think 50 feet on either side. And what you basically do is you just set a plug inside the casing.
Q Okay.
A And in this case, the tubing was in there, so they had to perforate the tubing in order to do that.
Q So they were attempting to follow the procedure --
A That's correct.
Q -- and they had problems.
As I read the first entry, for example, was the problem that they were experiencing water flowing up from the Judith?
A Again, you know, with the limited records that I have available, that's my impression of what happened.
Q Okay. I'm just trying to get some help here to understand what this document has to say.
A Right, right. And they were attempting to weight up heavy enough mud to be able to pump in, and it appears they were not able to do that.
Q Okay. And when they talk and Mesa talks in this

well record about attempting to kill the well, that means trying to shut off the flow of water from that formation?
A The term "kill" here is to get the well in a static condition where there is no -- where the well is -- there's zero pressure.
Q Okay. And as I note here that on the entry of September 12 of '84, it talks about what appears to be water flowing up at certain psi; is that correct?
A That's correct.
Q So that would be the pressure that you're trying to kill?
A That psi means pounds-per-square-inch pressure.
Q All right. And that's, when you try to kill a well, that's what you're trying to kill? You want that to be zero?
A That's correct.
Q From my review of these records here, when the record indicates that they were unsuccessful in killing the well, does that mean that the water is continuing to flow up the well, up to the surface?
A Again, not having, not having been there --
Q I understand that.
A -- and going from this report, that appears that that's what happened.

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Q Okay. And so have you experienced that in other wells before, where you've had a difficult time killing a well?
A Yes, and normally when you see that situation, it is that you have a zone that's shallow that has enough pressure and volume, and because it's so shallow you can't weight up enough mud to overcome that pressure gradient. As it gets deeper, it's easier to do that.
Q And this was a deeper formation, correct?
A No. This was a shallow formation.
Q This is the Judith?
A The Judith.
Q Nine hundred feet or so?
A Seven to 900 feet, that's correct.
Q And from your experience in the past, if you're having trouble with killing a well, I'm just trying to visualize what's happening on the well. Is there literally water that's coming out of the top of the well itself?
A Well, again, having not been there --
Q No, I'm just talking in general.
A -- that could be happening.
Q All right. Have you experienced that before, where water is coming up the top?
A Yes, I have.

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Q Okay. From your experience with Pioneer or Parker, how do you address the -- what do you do with the water that's coming up to the surface and you're not able to kill it? Is it just disposed of on the ground?
A Again, it depends on the situation. If it's something that happened and you weren't prepared for it, if you don't have steel tanks or you don't have tank trucks or if you don't have lined pits. You know, that's where it should be going. But if it's something that happened and they weren't prepared for it and it's flowing, it's obviously going to get out on the location.
Q Okay. So is that one of the purposes of a reserve pit, then, is in the event of a problem, that's where the water goes?
A That's correct.
Q And then the trucks are also used, if they're there, to haul off the water to another disposal site?
A Right.
Q Okay. From your review of the files, do you know whether there was a reserve pit on site here?
A I don't know.
Q Okay. If you look at the entry --
A Well, in fact, it says, "Ordered out backhoe and

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dug pits."
Q Right. That was my next question.
It looks to me, and again I know you weren't there, that that would be a response, to dig a pit for the water to go into?
A I would agree.
Q How difficult is it to line a pit to accept water from a formation like this?
A It's not difficult to line a pit. It just takes time.
Q We don't know from our records here whether this pit was lined or not, do we?
A I don't know.
Q Okay. Looking at that same entry of September 14 of '84, that last sentence says, "Unable to install BOP due to strong kick from csg."
A Casing.
Q What's a BOP?
A Blow-out preventer.
Q Okay. Is that, again, to kill the well?
A The blow-out preventer allows you to either close around -- you either have pipe rounds in the blow-out preventer or blind rounds, and pipe rounds allow you to close off around the tubing.
Q Okay.

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A And then you've got the well shut in.
Q Okay.
A And blind rounds, if you don't have tubing in the well, it goes all the way across like a valve and forms a permanent seal and shuts the well in.
Q When whoever wrote this used the words "strong kick from casing," does that have any special meaning in the oil field business?
A I guess it means different things to different people, but what it means to me is that they obviously had a water flow.
Q Earlier in that same paragraph, the third sentence, it states, "Still unable to kill, appears to have casing leak in the Judith River formation."
From your experience in the oil field industry, when you have water coming from a certain formation to the surface that you're trying to kill, how is it possible to determine from which formation that water is coming from?
A Well, if you can't, if you can't get deep enough to find out where the flow is coming from, you're not going to know. And again, I don't know how they knew it was coming from the Judith.
Q Um-hmm.
A It may have been assumption that they were making

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that they had a casing leak in the Judith.
Q Okay. From your review of these records, as I understand it, a relief well was installed, correct?
A In '85.
Q In '85. That was a year later?
A This was '84.
Q A year later, correct?
A That's correct.
Q They finished in September of '84, according to this record, on September 18 by welding a cap on the casing; is that correct?
A That's correct.
Q Okay. And then a year went by, or less than a year went by, and as I understand it, the records indicate that they were noticing some water around the well? Is that your –
A That's my understanding, um-hmm.
Q Okay. What would that be, from your experience? What type of problem would that be evidence of?
A Well, again, from my experience, that would indicate to me that something had broken down either around the well or in the well –
Q Okay.
A – from the previous plug job.
Q Would a potential problem at that time be an

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overpressurization of the zone that we had talked about?
A It could be, because from what I stated earlier, from what we have been able to evaluate and determine up to this point, it doesn't appear that the cement broke down.
Q In 1985?
A Right. Or even since then.
Q So from your review of the records, it looks like the cement that was used has held?
A I would agree with that.
Q Okay. And in order to make that determination, I take it you review cement bond logs; is that correct?
A No. You can't really tell the integrity of the cement from a cement bond log.
Q Okay.
A But from what we've been able to determine in looking at the hardness of the cement that we've been able to uncover in digging out around the well bores.
Q Okay.
A It doesn't mean that's necessarily the same consistency at depth.
Q How deep did you dig around to make that –
A Four feet – 8 feet. We dug around 8 feet. Two feet above my head, above the ground level, so

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3 feet.
Q You were down in the hole?
A I was down in the hole, right.
MR. GALLIK: Okay. Maybe we can take a quick break.
(Recess taken from 11:03:25 to 11:16:00.)
BY MR. GALLIK:
Q From your – I'm jumping around a little bit here, but I'll try to stay on track.
From your review of the records with respect to the saltwater disposal well as operated by Mesa, do you know whether there was a cement bond log run on that well before the injection started?
A I don't remember.
Q Okay. Do you know if you've ever seen one?
A I've seen a cement bond log, but I thought it was on 1-22. I don't remember seeing one on the disposal well.
Q Again, based upon your review of the records here on the Saltwater Disposal Well No. 1, were freshwater sands, to the extent that they existed, located behind the same string of casing as the Judith River formation?
A I don't know. I assume they were.
Q Why do you make that assumption?

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A Well, we drilled monitor wells recently adjacent to the old water well, and we did encounter freshwater zones.
Q Did you find that the Biere 1-22 had a hole in the surface casing when the well was plugged in '84?
A Say that again.
Q Did you find that the Biere 1-22 had a hole in the surface casing when the well was plugged in 1984?
A Well, again, all I have as far as references is the comment that you showed me earlier –
Q Okay. Does that indicate –
A – on Exhibit No. 60.
Q Does that indicate a hole in the surface casing?
A Again, it said that it appeared to have a hole in the surface – not the surface casing; the long string, the 5-1/2, not the surface casing. I think you asked if it had a hole in the surface casing.
Q That's correct. I did.
A No.
Q Okay.
A It does not indicate that it had a hole in the surface casing.
Q Okay. Getting back to that 1-22, as we talked earlier, it was plugged and abandoned, and then the next summer I think the water became evident around

the well, and then a relief well was installed?
A (Nodded head affirmatively.)
Q What was the purpose of that relief well?
A To drill a well close enough down to the Judith to be able to pump cement from the relief well over to the Biere 1-22 and seal off that flow.
Q Okay. From your review of the records and your investigation to date, do you believe that there was pollution to the fresh drinking water formations in the area of the Biere wells?
A It could have been occurring.
Q As a result of the various items that we've talked about today, for example, the fracture of the zone around the casing?
A I assume that that could be a possibility, or could have been a possibility.
Q In light of the findings that you've been able to establish as a result of your investigation, that it appears there's something going on with this well – is that a fair characterization of your testimony earlier, that there is something going on with this well?
A Then or now?
Q Now.
A It does appear that there is elevated

temperatures around the Biere 1-22, and it does appear that there is some communication around the well.
Q And when you say some "communication around the well," what does that mean?
A Possibly communication from the Judith.
Q Okay. And do you have any way of knowing how long that communication has been going on? Since 1985?
A We think that, from the information that we've been able to glean from our records, that it looked like it held or it did not start leaking or communicating again until about 1993, I think.
Q Okay.
A '93. I think that's correct.
Q And what evidence do you have that there was a problem that may have started in 1993?
A Basically just some information on temperature around the well.
Q Okay. There were temperature readings taken in 1993 around the well?
A There's publicly available information that you or anyone else can obtain that is satellite image information. I forget what year it starts, but you can obtain surface temperature on certain plots or locations from year to year. We took that information

and basically made an estimation from that.
Q Okay. So as I understand it, the information that you're talking about takes pictures of the earth?
A That's correct. It's satellite image information.
Q And that's able to somehow determine temperature of the ground; is that correct?
A Temperature of the ground in that vicinity.
Q And you apparently reviewed these records for a number of years?
A That's correct.
Q How far back do those records go, do you know?
A I think it started in '87.
Q And have you reviewed those records since 1987?
A I'm not sure I understand your question, but the information is predated, and we've currently reviewed the information over a period of time.
Q I guess I understand the answer. You've reviewed the information over a period of time. What years have you reviewed the records with respect to –
A I think the years that we have reviewed are '87, '93, '97, and '99, I think.
Q Okay. And just so I understand this technology that you're talking about, it's a picture of the earth that captures the relative temperature of the earth;

is that right?
A I don't totally understand the process, either, but I think that's right.
Q So what you have is a picture of the earth; is that correct?
A That's correct.
Q Would it look, for lack of a better analogy, similar to this map; for example, if the temperature is warmer at the surface in a certain area, it might be a different color?
A It could.
Q Okay. So in 1993, from your review, it indicates that the surface temperature had changed from 1987; is that correct?
A That's correct.
Q Okay. And the reason the surface temperature would change, is that because potentially the water below the surface has increased in temperature?
A That's a possible assumption.
Q Okay. Are there -- this may be beyond your field here, but are there other explanations that have been provided to you why that could be warmer around that well aside from an increase in the temperature of the water?
A No.

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Q Okay. And the water from the Judith formation, is that water that's at a higher temperature than water that might be closer to the surface?
A It is. I think, I think the average temperature, with limited information, it's somewhere between 127 to 140, 145 degrees.
Q Okay. And you indicated that this information is publicly available. Is this the federal government that does this sort of work?
A I think it's a private firm.
Q Private firm?
A (Nodded head affirmatively.)
Q Do you know the name of that firm?
A No, I don't.
Q So in terms of your investigation of these photographs -- are they photographs?
A They're photographs.
Q Okay.
A Well, again, I don't totally understand the process.
Q I don't expect you to.
A And there's some -- there's room for error and room for interpretation.
Q I understand.
A But, yes, it looks like a photograph.

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Q Okay. And as I understand your testimony from your understanding of this process or this technology, for lack of a better word, there appears to be a difference between the 1987 photograph and the 1993 photograph?
A That's correct.
Q Okay. Is there a difference between the 1993 photograph and -- did you say 1997 was the next year that you looked at a picture?
A Very little, if any, I think. Whatever changes are taking place, they're very, very gradual --
Q Okay.
A -- since '93.
Q And when you say "gradual" changes, does that mean the intensity of the temperature has not changed much or the area of change has not changed much?
A The area of change.
Q Okay. And the documents that you reviewed indicate that area of change being around the Biere well?
A That's correct.
Q Okay. Has Pioneer reviewed any other areas of land in the East Poplar Oil Field with that same technology for evidence of other changes in land temperature?

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A We were just concentrated on this area (indicating). I mean, you know -- well, that's basically what we were concentrating on.
Q So you've just looked at the photographs or computer imagery of the area around the Biere well?
A (Nodded head affirmatively.)
Q Is that correct?
A It was -- you know, it's a large area, but the area that we were concentrating on was this area right near our well.
Q Do you know the name of this private company that does this work?
A No, I don't.
Q In terms of the investigation that Pioneer has done with respect to these wells, it sounds like it's been fairly extensive in terms of -- let me see if I can summarize.
You've reviewed the records of Mesa, correct?
A (Nodded head affirmatively.)
Q Correct? You have to answer for the court reporter.
A Yes, I've reviewed the available Mesa records.
Q I take it you've also reviewed the state and federal files with respect to these wells?
A I haven't, but we've had -- I think, John, you've

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reviewed some of those records, I think.
Q And then there's the drilling and monitoring program that Pioneer has undertaken as part of its investigation; is that correct?
A That is correct.
Q And also part of the investigation involved the use of these satellite pictures, for lack of a better word; is that correct?
A Right.
Q Okay. Any other part of the investigation that Pioneer has conducted that we haven't talked about today?
A Not to my knowledge.
Q Okay. Has Pioneer, to your knowledge, undertaken any investigation of the records of operations of other oil companies in the area?
A Not to my knowledge.
Q As part of your investigation that's currently ongoing right now, I take it that you're looking for sources of problems, correct?
A Attempting to identify the source of the problem in the vicinity of our well.
Q Okay. And as part of the investigation as well, to determine how far the impact of the problems, if any, have extended?

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A I would say that's correct.
Q Okay. And aside from the investigation that we've talked about today, that we just went through, in terms of determining the extent of the possible impact, is there anything else that Pioneer is doing or has done that we haven't talked about today with respect to extent of impact?
A I don't think so.
Q Okay. Earlier I handed you the community relations plan for Pioneer.
A Yes, sir.
Q And as I take it, one of the goals of that is to keep the community informed of what it is that you're doing and the results of that work; is that correct?
A I think that's correct.
Q Okay. And the document speaks for itself, and I don't want to go through it in any detail, but it talks about having periodic meetings and distribution of information. Do you know if Pioneer has held any meetings up in the Poplar area?
A I'm not sure if we have or have not. I do know that we had one meeting with the EPA where Debbie Madison was in attendance.
Q Do you know if any meetings are planned in the future?

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A I don't know at this time.
Q Do you know if any fact sheets or technical summaries have been distributed to the people up in the community?
A I don't know.
Q Okay. Is Mr. Peterson from MSE/HKM still community involvement coordinator?
A It is my understanding that he is.
Q And he's available for any member of the public to call?
A I assume that he is.
Q Counsel for the plaintiffs?
A (No response.)
Q You don't have to answer.
A I can't answer that one.
Q We may have talked about this before. I think we may have touched on it, but just so I'm clear on this, in terms of Pioneer's policies and procedures for reporting spills or leaks of saltwater or oil, could you just summarize again what that policy and procedure is for reporting a spill or a leak?
A Internal reporting or reporting to the various agencies?
Q Both internal and external.
A Well, my position, which is Pioneer's position,

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reporting of spills, we report any and all spills of any magnitude.
Q Internally?
A Internally.
Q Okay.
A Related to spills that are reported to the state agencies, any oil spills of 5 barrels or more on land; any saltwater spills that are 25 barrels or more on land; anything on water, regardless of if it leaves a visible sheen, it's reported.
Q And I looked at the letter that Mr. Ross sent me with respect to Mesa's policies. Were you able to find any documentation concerning Mesa's policies with respect to reporting leaks and spills?
A I don't know what Mesa's policies were in '84 and '85.
Q Okay. From Pioneer's perspective, what documentation is generated when you do report a spill or leak of saltwater?
A Of saltwater?
Q Yes.
A Again, if it's less than 25 barrels of saltwater that was spilled, it's just an internal report. And then, of course, we work with the landowner in the remediation and cleanup. If it's 25 barrels or more,

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we fill out a report and submit it to the railroad commission or give them a call.
Q The railroad commission is the --
A State of Texas.
Q -- State of Texas?
A Right.
Q They do more --
A I use that as a standard.
Q The railroad commission does more than just railroads, then?
A Absolutely.
Q Okay. From your review of the records with respect to the Biere wells, were you able to determine how many barrels of oil were produced from those properties?
A From the Biere?
Q From the Biere, right.
A I don't know how much was produced from the Biere lease.
Q Okay.
A I think that information is available from the state.
Q From your review of the records, do you know if any gas was produced from those wells?
A I don't know that.

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Q Okay. As part of your investigation into the wells there, did you look into the amount of saltwater that was produced from those wells?
A Again, you know, that information has been made available from the State of Montana and, I think, API. I've seen those numbers. I don't remember exactly what they are.
Q Okay. API is what?
A American Petroleum Institute.
Q Okay.
A But I think those records came from the Montana Oil and Gas board.
Q Okay. Do you know, with respect to the Biere well, did Mesa dispose of saltwater or other water from any other producers into the saltwater disposal well?
A From my review of the records, it appeared that they only disposed of saltwater from the produced well on the Biere lease.
Q Okay. Do you know from your review of the records whether Mesa ever injected or disposed of freshwater into the subsurface below its properties in the East Poplar Oil Field?
A I am not aware of that occurring.
Q Okay. Are you aware of Mesa ever utilizing water

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for any purpose from freshwater wells on its properties in the East Poplar Oil Field?
A I don't know.
Q Okay. From your review of the records, do you know whether any freshwater wells exist or existed on Mesa's properties in the East Poplar Oil Field?
A I don't have any knowledge of that.
Q Other than the plaintiffs and the EPA that we've talked about today, has Pioneer received any other complaints from other people or entities concerning the quality of the groundwater in the general area of Mesa's operations?
A Not to my knowledge.
Q Okay. Aside from the Environmental Protection Agency, has Pioneer received any other complaints from a regulatory agency about the Mesa wells?
A Again, not to my knowledge.
Q Okay. Now I take it you've reviewed a copy or at least seen a copy of Joanna Thamke's report?
A There have been a number of those reports.
Q Okay. Let's talk about the 1997 report.
A Yes, I have read that report.
Q Okay. Have you talked to Ms. Thamke about that report?
A No, I haven't.

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Q Okay. Do you know, from your participation in the investigation here, did Mesa supply any information to Ms. Thamke with respect to the Biere wells?
A I don't know.
Q Do you know when Pioneer first received a copy of the Thamke report?
A It was after we found out about the lawsuit, so it was either late '98 or sometime in 1999.
Q Okay. And did you first become aware of complaints by landowners in the vicinity of these operations when the complaint was filed, the complaint being the lawsuit filed?
A I think that's correct. Prior to that, we had no knowledge of a problem --
Q Okay.
A -- on the Biere lease.
Q And the way Pioneer has responded to those complaints I think we've talked about at some length today with respect to your investigation; is that correct?
A Right.
Q And the community relations plan?
A That's correct.
Q Okay. And I think I meant to ask you this

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earlier. I just want to make sure. Has Pioneer, to date, conducted any investigation as to remediation, as opposed to just finding out the source, but as to solving the problem of contaminated groundwater?
A We haven't gotten to that phase yet.
Q Okay. You mentioned earlier that you've been involved in a project or projects where groundwater is contaminated. You mentioned a method, where it's available, to inject freshwater into the aquifer; is that correct?
A That's correct.
Q A flushing sort of --
A That's correct.
Q -- action?
In those areas where it's not possible to use the flushing method, what have you done or experienced in the past where flushing won't work with respect to a contaminated aquifer?
A Well, make an attempt to provide an alternative water source.
Q Okay. And in terms of the alternative water sources, let's take, for example -- was that Texas, I think, was the other place where you couldn't use the flushing method?
A Well, again, the projects that I had mentioned to

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you earlier, one in Oklahoma and one in Odessa, Texas, had no impact on the freshwater or the drinking water supply.
Q I see. So you didn't have to –
A We didn't have to provide an alternative water source.
Q In terms of using the flushing method, again we may have talked about this, but whether that's a feasible alternative, is that dependent in part on the size of the aquifer?
A It depends on the size. It depends on the formation itself, whether or not it's homogeneous or whether it's – depending on whether it has the permeability, the ability for a fluid to flow through the formation from Point A to Point B and whether or not there's enough porosity there to accomplish that.
Q Okay. Does economics play a factor in whether or not to use the flushing method as well?
A I would have to say yes compared to other available options, whatever those options might be.
Q And from your experience, what other options are available?
A Well, providing an alternative water source, for instance. I'm not sure what other options are available at this point in time.

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Q And are we talking about the East Poplar Oil Field when you say "at this point in time," or are we talking in general?
A Well, I'm – well, in general.
Q Okay. So from your experience, you've not had to investigate other possible sources of providing water aside from flushing?
A Provided – well, there is another method, not necessarily due to contamination of groundwater, where you can install event wells. If you have a hydrocarbon product, you can allow that product to dissipate by venting to the atmosphere, is another option.
Q Okay.
A But again, that's not related to where you have saltwater contamination.
Q Okay. One of the questions that we asked during the discovery was the document retention policy for Pioneer, and some documents were produced. Have you seen the documents that were produced with respect to the document retention policy?
A Again, the question?
Q What is Pioneer's document retention policy, if you know?
A Yes, we do have a document retention policy.

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That has been established since Pioneer has been a company starting in 1997. And depending on the document, there is a certain life for that document that has been established that we have to maintain those documents.
Q Okay. And part of the deposition request asked that Pioneer supplement or produce any documents that have come into its existence or generated or produced after your other answers to discovery requests. Did you bring with you any other documents that were responsive?
A No, I did not.
Q Okay. I'll jump around a little bit here.
Is it possible for water, let's say, from the Judith River formation to make its way to the surface without contaminating intervening freshwater zones?
A I'm not sure I could give you the correct answer on that, but I would assume, if I understand your question, if water is escaping from the Judith to the surface, is it possible to complete that path without contaminating the freshwater zone? And I would say if it's outside, any case, total, I would think no.
Q Okay. Having reviewed the plugging procedure that was employed for the Biere wells by Mesa, how do those procedures compare to Pioneer's policies and

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procedures with respect to plugging wells? Any difference?
A Again, not having been on location in '84 and '85 and experiencing the problems that they were having at that particular time, I still have to say that, with the problems that they were having and working with the Montana Oil and Gas board, that I would have probably plugged the well the same way –
Q In the year –
A – in representation of Pioneer.
Q In the year 2001?
A Probably.
Q Are you aware, from your review of the records, of any pits on site aside from the pit that we talked about earlier that was dug when they were having problems with the well?
A I am not aware of any pits that existed. You know, I'm not saying that they did not exist.
Q No, I understand.
A But from the records that I have looked at, I don't see any evidence that they had – you know, there are no pictures that show any pits.
Q Okay. Have you reviewed any aerial photographs of the operation that may have been taken back in the '80s?

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A I've looked at two aerial photographs, and I could not tell from either one of those photographs whether or not there were existing pits.
Q Okay. You talked to the landowner about other –
A The landowner, I think, indicated that there were pits at one time.
Q Okay. Are you aware of any pipelines associated with the wells and the disposal well?
A Only the pipelines that would go from the producing well to the facility and then from the facility to the disposal well.
Q Have you conducted any investigation as to whether or not any of those pipelines may have experienced any problems?
A And again, I don't know. I don't have any information whether they did or did not have any problems.
Q Okay. When a well is abandoned, are those pipelines typically dug up and removed?
A Normally, they are.
Q And in this case, does it appear that those pipelines were removed?
A Again, I don't know. In some cases, you can get permission from the landowner to leave those pipelines in place if they're buried below plow depth. And, of

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course, in this case, we're talking about very short lines.
Q Yes.
A You know, I think there's just a few hundred feet between those wells.
Q You testified earlier that you're awaiting approval from the EPA with respect to going forward with additional monitoring wells; is that correct?
A That's correct.
Q Okay. Is there any sort of indication on when you're expecting or hoping to get that approval from EPA?
A I think the monitor plan is going to be approved. If it hasn't already been approved, it will be approved very quickly by the EPA.
Q Okay. And the monitoring plan that you're talking about, do you have in front of you the investigation plan?
A Is this the one you're talking about? Oh, this one?
Q Yes.
A Exhibit 56. Is that the one?
Q That's correct. Yes. I didn't make a note on mine.
If you're looking at page 3 of that document, it

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talks about Pioneer Natural Resources Wells 9 through 12. Are those part of the optional wells that you're talking about now with the EPA?
A I think that's correct.
Q In terms of the remediation plan that you submitted to the EPA, is that part of a larger document than Exhibit 56 that we're talking about here?
A It's a separate document.
Q Okay. And that was prepared at the EPA's request?
A That's correct.
Q Okay. And do you know when that was submitted to them?
A Not for sure.
Q Okay. Does EPA, after it received that document, does it correspond with you about what they believe to be the adequacy or inadequacy of the proposed program?
A In fact, that's what we're waiting on now, is the approval to inject the Halliburton Injectrol-U product, and we provided all of the available information, hopefully, that they've asked for.
Q Okay.
A And once they're satisfied with that input, we hope they grant us our injection permit –

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Q Okay.
A – and approval of our remediation plan.
Q Okay. One of the areas of the deposition notice concerned insurance, and Mr. Ross's letter indicated that Mr. Dover will try to have some information regarding insurance. Were you able to determine whether Pioneer has insurance that covers this sort of problem?
A That is still being investigated, because you have to go back in time, and our human resource manager is pursuing that with the insurance companies.
Q Okay.
A And, of course, Pioneer is currently insured with current operations.
Q Okay. And who is your human resources person?
A Larry Paulsen. He's vice-president in charge of our human resources –
Q Okay.
A – and also risk management, which is our insurance coverage.
Q Have you talked to any former Mesa employees or officers who may have had some involvement with these particular Biere wells as part of your investigation?
A I talked to a couple of them, but they don't seem to have much of a recall, and, you know, that's been

such a – quite a few years ago, and most of those people have since retired.
Q Do you recall the names of the people that you spoke with?
A Well, I talked to George Dixon, who was a supervisor over that area, I think out of Amarillo, but he's currently retired.
Q And he was a supervisor over in that area; "that area" would be the East Poplar Oil Field?
A That's correct.
Q Anyone else besides Mr. Dixon?
A I made attempt to get a hold of some of the other individuals but did not have any luck.
MR. GALLIK: Okay. Bear with me a second. I think we're about done here.
(Discussion off the record.)
BY MR. GALLIK:
Q I did have a couple of questions about the field investigation evaluation.
A Exhibit 59.
Q Thank you.
This was a report prepared by CH2MHill; is that correct?
A That's correct.
Q And that was a company that Pioneer hired to

conduct the investigation?
A That's correct.
Q And are they still conducting the investigation for you?
A They are.
Q Okay. With respect to the summary that I've attached to the cover page there, Point No. 5, do you see that there?
A I do.
Q Okay. It states, "The most likely source(s) of saline water and BTEX" – what is BTEX?
A BTEX is benzene, toluene, ethyl benzene, and xylene.
Q – "in the study area are petroleum wells penetrating the Mississippian Age oil formations at depth."
A couple questions. From your analysis, I take it, of water in the aquifer, there was evidence of BTEX; is that correct?
A In some of the wells. A very limited number of the wells.
Q This report states that the most likely source is petroleum wells. Do you disagree with that?
A No. BTEX is a naturally occurring compound of crude oil.

Q Okay. How about saline water?
A Saline, again, is brine or calcium chloride water. Produced water.
Q The report concludes that the most likely source of saline and BTEX are petroleum wells. Do you disagree with that?
A No, I don't, but I would add a comment to that. It also could be available in disposal wells or injection wells.
Q The BTEX?
A Yes, because you get a certain percent of hydrocarbon carryover with your produced water.
Q Paragraph 6, do you see that?
A I do.
Q Do you agree with paragraph 6?
(Pause.)
THE DEPONENT: I think that's pretty strong. I'm not sure I totally agree with that. I think it's a possibility that they may have contributed, but I, I have no clue – I have no knowledge that many of them are still contributing.
BY MR. GALLIK:
Q Aside from that portion of the paragraph, is there anything else that you disagree with with the statements in that paragraph?

A Well, I think it's hard, I think it's hard to prove that there's ongoing contamination from many of the wells. You can't prove it or disprove it.
Q Okay.
A But I agree with the water chemistry signatures. You need that.
Q Thank you, Mr. Dover. I don't have any further questions at this time.
A I have something. I made a comment earlier. You asked a question – if I may clear up a comment that I made earlier –
Q You bet.
A – about Mr. Lockman's freshwater wells?
Q Yes.
A I really don't – I think the way you asked the question, I think you asked me if the water from either one of those wells was a drinking source, and I don't know if he did or did not –
Q Okay.
A – because I don't know what period of time he stopped using those wells.
MR. GALLIK: Okay. I have nothing further.
MR. MURPHY: No questions.
MR. STERUP: No questions.
MR. WEBSTER: No questions.

MR. ROSS: I have just a couple followup questions.

EXAMINATION

BY MR. ROSS:

Q I think Mr. Gallik asked you a question about a prudent operator, whether you would expect contamination if there were a prudent operator. Is it possible that contamination could occur even though you had a prudent operator?

A Absolutely, because there are things that can, even though you are the most prudent operator, there are mechanical failures that can occur that an operator may or may not have knowledge about until after the damage has been done. And even though you – you know, the most prudent operator will have mechanical upsets, will have pipeline failures, will have tank failures, and, you know, the prudent operator will immediately clean up and remediate those projects, but that doesn't preclude a certain amount of damage from being done.

Q All right. And I think he also asked you questions about monitoring properties. Does that apply to plugged and abandoned properties?

A Normally once a well has been permanently plugged and abandoned, and it's been plugged and abandoned

according to the local current rules and regulations, "local" statewise, and federal rules, there is no reason that you should be concerned about that well being an ongoing pollution problem. Because once it's permanently plugged, normally we don't, in most cases, we don't have a problem that occurs after that well has been permanently plugged and abandoned unless there's some outside influence that has caused that seal to break down.

MR. ROSS: Okay. I have no other questions.

MR. GALLIK: Just a quick followup on that.

REEXAMINATION

BY MR. GALLIK:

Q With respect to Pioneer, in light of the last answer that you gave about monitoring of abandoned wells, has Pioneer reexamined that particular policy in light of what's happened in the East Poplar Oil Field?

A We review each well case by case prior to the well being permanently plugged and abandoned to make sure that we're following the proper procedures, and I can't really say that this would have caused us to make a change in our current process because I feel that our current process, processes, are adequate. That doesn't mean that at some point in time you won't

have a failure, because I, I think regardless what procedures and guidelines and rules that you have in place, you know, there's always something that could change subsurface that's beyond your control.

I don't know if I've adequately answered that question, but, you know, I'm comfortable with our current procedures, plugging procedures.

Q So in terms of monitoring abandoned wells, the East Poplar Oil Field incident here with respect to the Biere well has not, at least at this moment, caused Pioneer to change its policies with respect to monitoring of abandoned wells?

A Honestly, I think it's going to cause me to take a closer look at all of our operations.

Q Okay. In response to one of the first questions Mr. Ross asked you, and I think you answered it, mechanical failures do happen, correct?

A That's correct.

Q And it is Pioneer's policy that if a failure happens and there is pollution, to clean it up?

A There could be pollution. Right.

Q And if there is pollution resulting from mechanical failure, it is your policy to clean it up?

A I look at all of the options available, and cleanup would be one of options, or could be.

MR. GALLIK: Okay. Thank you. Thank you for coming to Montana.

THE DEPONENT: I enjoy Montana. Not as hot as Texas.

(The deposition was concluded at 12:05:44.)

DEPONENT'S CERTIFICATE

I, Wilbur L. Dover, do hereby certify that I have read the foregoing 115 pages of typewritten material and that the same is, with any changes noted below, a full, true, and correct transcript of my oral deposition given at the time and place hereinbefore mentioned.

PAGE	LINE	CORRECTION	REASON FOR CORRECTION

_____
Wilbur L. Dover

Subscribed and sworn to before me this _____ day of _____, 2001.

_____
Notary Public
For the State of _____
(Seal) Residing at _____

My commission expires:
_____.

REPORTER'S CERTIFICATE

I, JoAnn C. Bacheller, a Registered Diplomate Reporter and Certified Realtime Reporter, certify that the deponent, Wilbur L. Dover, was first duly sworn by me to testify the truth; that I was then and there authorized to administer an oath; that his deposition was reported by me in machine shorthand and thereafter reduced to typewriting using computer-assisted transcription; that after being reduced to typewriting, the original of this transcript was retained by the reporter and a copy delivered to Mr. John Walker Ross for the deponent's examination and signature; and that this is a true and correct record of the testimony given by said deponent.

I further certify that I am not attorney for, nor employed by, nor related to any of the parties or attorneys to this action, nor financially interested in the action.

IN WITNESS WHEREOF, I have set my hand and seal at Billings, Montana this 8th day of July, 2001.

(Seal)

JoAnn C. Bacheller
Registered Diplomate Reporter
Certified Realtime Reporter
Notary Public for the
State of Montana

My commission expires 9-20-04.

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